

## REMARKS

### Objections to the Specification

The disclosure was objected for failure to capitalize all of the letters in the term "Facstar Plus" and to utilize generic terminology in conjunction with this term. An appropriate amendment has been made above. As a point of clarification, Applicants note that the Office Action indicates that the term "Facstar Plus" appears on page 12, line 9. In fact, "Facstar Plus" appears on page 15, line 19.

### Rejections Under 35 U.S.C. § 103

Claims 1-13 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Guo et al. in view Ellis et al. as evidenced by Unanue and Dezutter-Dambuyant. This rejection is respectfully traversed.

Guo is cited as allegedly teaching murine cell hybrids between activated B cells and tumor cells. This summation, however, omits several significant limitations taught by Guo. More specifically, Guo teaches the use of syngeneic, activated B cells fused with BERH hepatocarcinoma cells; the fusion product is taught as being a vaccine for BERH hepatocarcinoma. There are numerous significant differences between the teachings of Guo and the present invention.

The Office Action concedes that Guo does not teach the use of dendritic cells as APCs, but cites to the Ellis article to allegedly overcome this shortcoming. Ellis is cited as teaching "that dendritic cells are the most effective APCs for inducing T cell proliferation . . ." (Office Action at page 3). Ellis is also cited as teaching a comparison of the ability of different types of APCs to stimulate cytokine production. The Office Action concludes that it would have been *prima facie* obvious to substitute the dendritic cells taught by Ellis for the B cells of Guo to make a fusion partner with a tumor cell. Applicants submit that, in fact, the substitution suggested in the Office Action would not be obvious to one skilled in the art, and indeed was not obvious to Guo.

The Ellis article was published in 1991, more than two years before the Guo article was published in 1994. Thus, the Ellis article was available to Guo several years prior to publication of Guo's results. Ellis states that B cells, both activated and resting, did not stimulate proliferation (page 2806, column 2), and that accessory cells other than dendritic cells were not suitable for the stimulation of T cell response (page 2808, column 2). Thus, Ellis teaches away from the use of B

cells in the stimulation of cytokine production by T cells. Guo, in contrast, states that “activated B cells are the most effective antigen-presenting cells.” (See page 518, column 1). Guo would have had access to the teachings of Ellis regarding the alleged superiority of dendritic cells at the time of his investigation, yet appears to totally disagree with the Ellis conclusion that B cells are not effective. If anything, the teachings of the references are decidedly contrary to each other; it cannot be said, therefore, that one skilled in the art would be motivated to combine the teachings of the references by substituting the dendritic cells of Ellis for the B cells of Guo; moreover, one skilled in the art would most likely conclude, based upon a review of both references, that they could not be combined or reconciled in the manner suggested in the Office Action. Furthermore, Ellis does not remotely suggest the fusion of dendritic cells with any type of tumor cell, further lessening the likelihood that one skilled in the art would have been motivated to combine the teachings of the references to arrive at the present invention.

Guo teaches fusion of the syngeneic, activated B cell with a very specific type of tumor cell, namely the BERH heptacarcinoma cell. The Office Action concludes that all of the tumor cells recited in Applicants’ Claim 4 are within the teachings of Guo, “because one skilled in the art would have an equal expectation of success with any other type of tumor cell as that experienced by Guo et al. with heptacarcinoma cells.” (Office Action at page 4). Applicants respectfully submit that this is an improper conclusion to draw from the teachings of Guo. Guo specifically states on page 520, column 1, that “whether this approach can be used in other tumor models remains to be determined.” Thus, Guo clearly states that it is uncertain as to whether their methods would work with any tumors other than the heptacarcinoma. In contrast, Applicants have recognized that their methods are effective with numerous tumor cell types.

Finally, and perhaps most significantly, Guo teaches the use of activated B cell/BEHR heptacarcinoma fusion products as vaccines. Guo does not even remotely suggest the method for generating antigen-specific T cells as taught by Applicants. More specifically, Guo does not teach mixing autologous dendritic cells and either tumor cells or virally infected cells, adding autologous T cells to this mixture, culturing the mixture, and harvesting of T cells from the mixture. This significant shortcoming is not overcome by any of the secondary references. In addition, the Office Action fails to delineate how the references combine to teach this

method, focusing instead on the APC/tumor cell hybrid and apparently ignoring steps b-d of Claim 1.

The Office Action also cites to the Unanue reference as allegedly providing “evidence that splenic dendritic cells are the same as those found in lymph nodes and as the Langerhans cells of the skin . . .” and the Dezutter-Dambuyant reference as allegedly evidencing “that these are also the same as the dermal dendritic cells and which arise from bone marrow precursors . . . .” (Office Action at page 4). Applicants disagree with the characterizations of the references. The cited section of the Unanue reference states that the Langerhans dendritic cells, including the Langerhans cells of the skin, the “‘veiled cells’ of afferent lymphatics, the dendritic cells (DCs) of the spleen and some of the ‘interdigitating cells’ of the lymphoid organs” are “a family of related cells” (emphasis added), not “the same” as suggested by the Office Action. In addition, the abstract of the Dezutter-Dambuyant reference does not appear to discuss splenic antigen-presenting cells. In any event, even if these references did teach the equivalence of splenic antigen-presenting cells to other forms of APCs, which Applicants do not concede, they do not overcome the shortcomings of the Guo and Ellis references.

Finally, Guo does not teach “that APCs can effectively present antigens of tumor cells with which they are fused” as stated by the Office Action at page 4. As noted above, teachings of Guo are limited to a specific type of APC, namely activated B cells.

For a combination of references to be properly applied, there must be some teaching along the lines of the invention in those references. (*In re Sernaker*, 217 U.S.P.Q. 1 (Fed. Cir. 1983), a copy of which is enclosed.) Here, the Applicants can discern no teaching whatsoever of the present invention in the cited references. Guo teaches only the use of activated, B cells, and the use of a particular tumor cell in generating a fusion product. The teachings of Ellis, which were available to Guo several years before publication, in contrast to being combinable with Guo, are irreconcilable. The citation to the Unanue and Dezutter-Dambuyant references does nothing to support the claim of obviousness. In any event, all four references are completely silent as to a method for generating antigen-specific T cells. None of the references teach or remotely suggest combining autologous dendritic cells, either tumor or virally infected cells, and autologous T cells; culturing the three types of cells; and harvesting the T cells from the mixture. Applicants respectfully submit,

therefore, that the invention as embodied in Claims 1-13 is clearly patentable over the art of record.

SUMMARY

Applicants respectfully submit that the amendment to the specification made above overcomes the objections to the specification. In addition, Applicants respectfully submit that Claims 1-13 are patentable over the art of record. None of the references teach or remotely suggest a method for generating antigen-specific T cells as taught by Applicants. Accordingly, it is submitted that Claims 1-13 are in condition for allowance; such action is respectfully requested at an early date.

Respectfully submitted,



Diane R. Meyers

Registration No. 38,968

Eckert Seamans Cherin & Mellott, LLC

600 Grant Street, 44<sup>th</sup> Floor

Pittsburgh, PA 15219

Attorney for Applicants

(412) 566-2036



**Decisions  
of the  
United States Courts  
and of the  
United States Patent and Trademark Office  
in  
Patent, Trademark, and Copyright Cases**

Court of Appeals, Federal Circuit

In re Sernaker

No. 82-579

Decided Feb. 28, 1983

**PATENTS**

**1. Claims — Dependent (§20.35)**

Dependent claims, patentability of which were not argued separately, stand or fall with independent claims.

**2. Patentability — Anticipation — Combining references (§51.905)**

Assuming that all prior art references are sufficiently related to one another and to related and common art that hypothetical person skilled in art must be presumed to be familiar with all of them, next questions as to whether Board of Appeals correctly deduced obviousness from prior art are whether combination of teachings of all or any of references would have suggested, expressly or by implication, possibility of achieving further improvement by combining such teachings along line of invention in suit, and whether claimed invention achieved more than combination that any or all of prior art references

suggested, expressly or by reasonable implication.

**3. Court of Appeals for the Federal Circuit — Pleading and practice (§26.57)**

CCPA cases reviewing decisions of Board of Appeals under Section 103 are binding precedents in CAFC, as much as CAFC's cases will be; none can be treated as discredited merely because expressions in them can be taken out of their context and construed as in conflict with expressions in other cases.

**4. Patentability — Anticipation — Modifying references (§51.217)**

**Patentability — Evidence of — Suggestions of prior art (§51.469)**

It is not necessary that prior art suggest expressly or in so many words changes or possible improvements inventor made; it is only necessary that he apply knowledge clearly present in prior art.

**5. Patentability — Anticipation — Combining references (§51.905)**

Lesson of In re Imperator, 179 USPQ 730, is that prior art references in combination do not make invention obvious unless something in prior art references would suggest advan-

tage to be derived from combining their teachings.

**6. Patentability — Evidence of — In general (§51.451)**

Secondary considerations that Supreme Court stated might be of possible utility in obviousness determination, *Graham v. John Deere Co.*, 148 USPQ 466-7, require nonobviousness finding if matter is otherwise doubtful.

**7. Board of Appeals — Issues determined (§19.30)**

**Patentability — Evidence of — In general (§51.451)**

Board of Appeals must always consider, in connection with obviousness determination, evidence relating to secondary considerations that applicant properly presented.

**8. Patentability — Evidence of — Commercial success — Causes (§51.4555)**

Fact that prior art references relied on had not been available to inventor very long and things were moving fast in that industry might justify thought that want filled by invention had not been felt very long, but it does not wholly justify ignoring secondary considerations that speak with unusual eloquence.

**9. Affidavits — Distinguishing from references (§12.7)**

Patent Rule 116(b) allows examiner to admit affidavit that attests to uniqueness of invention after his final action upon showing of good cause.

**10. Affidavits — In general (§12.1)**

**Board of Appeals — Procedure and practice (§19.45)**

**Pleading and practice in Patent Office — Rules effect (§54.9)**

Under Patent Rule 195, Board of Appeals has power to admit affidavit attesting that invention has met with great commercial success, helped revitalize depressed industry, and introduced new item into marketplace not previously presented upon showing of good cause.

**11. Patentability — Evidence of — Commercial success — In general (§51.4551)**

Notion that Board of Appeals' bare compliment of appellants' device as "extremely attractive" implies assignment of weight to appellant's commercial success evidence is rejected, since to accept this notion would shrink meaning of phrase "secondary considerations" beyond belief.

**Particular patents — Emblem Sernaker, Embroidered Transfer and Method of Making, rejection of claims reversed.**

**Appeal from Patent and Trademark Office Board of Appeals.**

Application for patent of Howard Sernaker, Serial No. 916,018, filed June 15, 1978. From decision rejecting claims 1-6 and 8-11, applicant appeals. Reversed; Davis, Circuit Judge, concurring in part and concurring in the result, with opinion.

Michael F. Petock, Philadelphia, Pa., for appellant.

Fred W. Sherling (Joseph F. Nakamura, on the brief) for Patent and Trademark Office.

Before Davis, Circuit Judge, Cowen, Senior Circuit Judge, and Nichols, Circuit Judge.

Nichols, Circuit Judge.

This case is before us on appeal from the decision of the Patent and Trademark Office Board of Appeals (board). In a 2-1 decision, the board affirmed the examiner's rejection, under 35 U.S.C. § 103, of claims 1-6 and 8-11 in appellant's application serial No. 916,018, filed June 15, 1978, entitled "Embroidered Transfer and Method of Marking." These claims comprise all the claims in the case. *We reverse.*

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**Background**

**A. The Invention**

Appellant has invented a type of embroidered emblem and a method of making the same. Claims 1 and 10, the only independent claims in appellant's application, are representative of the method and of the emblem, respectively:

1. A method of making an embroidered transfer or emblem comprising the steps of:

(a) embroidering a pattern on a portion of a substrate while using thread free from oil and with said thread being of a single color and in an amount so that a portion of the pattern is sculptured by having a greater thickness than another portion of the pattern,

(b) separating the pattern and its associated substrate portion from the remainder of the substrate,

particular patents — Emblem  
maker, Embroidered Transfer and  
Method of Making, rejection of claims  
reversed.

Appeal from Patent and Trademark Office  
of Appeals.

Application for patent of Howard Ser-  
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Attorney: F. Petock, Philadelphia, Pa., for  
appellant.

V. Sherling (Joseph F. Nakamura, on  
brief) for Patent and Trademark  
Office.

Davis, Circuit Judge, Cowen, Senior  
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1. Circuit Judge.

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10 of appellant's application serial No.  
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## I.

### Background

#### Invention

Appellant has invented a type of embroi-  
dered emblem and a method of making the  
emblem. Claims 1 and 10, the only independent  
claims in appellant's application, are repre-  
sentative of the method and of the emblem,  
respectively.

Claim 1 is a method of making an embroidered  
emblem comprising the steps of: embroi-  
dering a pattern on a portion of a sub-  
strate while using thread free from the sub-  
strate with said thread being of a single  
color and in an amount so that a portion of  
the pattern is sculptured by having a great-  
ness that another portion of the pattern  
is not, separating the pattern and its associ-  
ated substrate portion from the remainder of  
the substrate.

(c) providing a transfer print on paper  
with a dyestuff of at least two different  
colors and capable of subliming under heat  
and pressure or vacuum,

(d) registering portions of the print with  
a matching portion of said pattern,

(e) transferring color from said print as a  
gas to the warp side of the pattern while  
applying sufficient heat to sublime said  
dyestuff.

10. An embroidered transfer emblem  
comprising an embroidered pattern on one  
side of a substrate whose size corresponds  
to the size of the pattern with thread of a  
single color which is free of needle oil,  
portions of the pattern having a sculptured  
effect by an increased number of thread  
stitches, at least two colors of dyestuff  
printed on the thread stitches defining said  
portions and on other portions of the pat-  
tern, said colors being in registry with said  
sculptured portions of said pattern with at  
least one of said printed portions including  
printing outlining a configuration on a por-  
tion of said pattern, and said colors being  
printed on the warp side of said pattern.

[1] The remaining claims are either depen-  
dent on method claim 1 (claim 2-6) or on  
article claim 10 (claims 8, 9 and 11). For  
example, claim 2 defines a method in accor-  
dance with claim 1 of "applying a thermo-  
plastic adhesive to the shuttle side of the  
thusly printed pattern." Since neither of the  
parties argues separately the patentability of  
each of the rejected claims, the dependent  
claims will stand or fall with independent  
claims 1 and 10. In re Burckel, 592 F.2d  
1175, 1178-79, 201 USPQ 67, 70 (CCPA  
1979).

The claim language includes several key  
phrases that we should define at the outset.  
When the inventor uses "registering" and "in  
registry," he appears by the context to mean  
placing or placed in correspondence. A "sub-  
strate" literally means a basis on which an  
organism lives, as a plant on the soil. Another  
common definition of the term in scientific  
circles is any solid surface on which a coating  
or layer of different material is deposited.  
Under both definitions, application to an em-  
broidery is an understandable analogy.

The record includes samples of the "em-  
blems" made by the claimed method, as com-  
pleted, and in intermediate stages. As com-  
pleted, the "emblems" are justly characterized  
by the board as "extremely attractive." They  
are apparently badges affixed to garments to  
convey messages about the loyalties, affilia-  
tions, tastes, and preferences of the wearer.  
Would that we judges had something of the  
sort to brighten up our robes!

The emblem produced by appellant's  
method resembles an emblem initially em-  
broidered with different colored threads. Ap-  
pellant's method, however, circumvents the  
need to embroider the desired pattern with  
these different colored threads. Rather, a  
manufacturer following appellant's method  
first embroiders the pattern with thread of  
one color on a substrate, separates the em-  
broidery and its associated substrate from the  
rest of the substrate, and then essentially dyes  
the threads different colors by use of a trans-  
fer print. Such a transfer print consists of two  
or more dyestuffs on a piece of paper ar-  
ranged in a pattern mirroring in shape or  
"mating" the pattern of the embroidery. By  
placing the transfer print over the embroidery  
so that the dyestuffs face the embroidery and  
match its pattern, and then by applying heat  
and pressure or vacuum conditions, the dyes-  
tuffs on the paper will sublime and then  
adhere to the matching portion of the  
embroidery.

Before appellant's invention, a manufac-  
turer would use the Shiffli embroidery ma-  
chine alone to mass produce embroidery. This  
large machine, however, cannot stitch thread  
of more than one color at a time. Thus, to  
create multicolored patterns, the machine  
would be shut down after each separate color  
had been embroidered so its 684 needles could  
be rethreaded with the next color thread.  
Since each rethreading procedure takes about  
45 minutes, the number of different colors  
that were commercially feasible to use in a  
single emblem was limited. With appellant's  
invented method, on the other hand, a manu-  
facturer can produce an emblem of many  
colors because he needs not rethread the ma-  
chine anew for each desired color. Instead,  
only one color (usually white) is used for the  
entire embroidered pattern, and then the pat-  
tern is dyed different colors with one multico-  
lored transfer print.

### B. The References

The references relied upon by the board  
are:

Haigh	3,657,060	April 18, 1972
Cox	3,974,010	August 10, 1976
Sernaker	4,092,451	May 30, 1978
British patent	1,243,223	August 18, 1971

Miles, L.W.C., Journal of the Society of  
Dyers and Colorists, May 1977, pages  
161-163.

Vellins, British Knitting Industry, Vol.  
46, No. 524, January 1973, pages 45, 46,  
48, 50, 53, 55, 57, 59, 63, 65, 67, and 69.

The Butterick Fabric Handbook, Pub-  
lished by Butterick Publishing, A Division

of American Can Company, New York, New York, 1975, pages 99, 100, 119-121, and 142.

The British patent discloses a process of transfer printing on all types of textile articles regardless of their fibers, and a like process of printing on a variety of non-textile articles. With respect to transfer printing on textile articles, the British patent recites a general line of materials to which the process may be applied:

\*\*\* [F]leeces or webs of non-woven fibers, textile threads, woven webs, knitted material, lace, spongy material in sheet form or already shaped, or even made up articles of clothing.

[British, page 1, lines 68-72.]

The British patent does not specifically mention embroidery as an article susceptible to transfer printing. This patent does, however, teach that a multicolored design may be transferred to textile articles, generally, from a transfer print:

\*\*\* [S]everal dyes of different colours can be applied on the same support [of the transfer print], these dyes being either intimately mixed or distributed in order to form the designs which are to be transferred to the textile articles.

[British, page 2, lines 44-48, emphasis supplied.]

The Miles reference teaches that transfer printing can be done on a variety of substrates, such as substrates of polyester and of carpet tile. Miles specifically states that when transferring designs from a paper transfer print to fiber, perfect contact is not necessary because of the vapor state of the dye when it transfers. Although Miles exhibits an awareness of embroidery procedures, he does so in the context of describing the transfer of embroidered patterns onto nonembroidered surfaces; Miles does not teach transfer printing on embroidery itself. Vellins not only teaches transfer printing on a variety of textile substrates (including carpet), but also teaches the deleterious effects of transfer printing on a polyester substrate that contains lubricating oil and other such substances.

The remainder of the references concern various embroidery techniques and methods of producing embroidered emblems, rather than teachings about transfer printing. Butterick reveals that white-on-white embroidery, such as embroidery decoration on a white tablecloth, is commonly made. Butterick also teaches that designs formed in lace can be outlined with embroidery stitching; Butterick defines this entire piece of lace as "re-embroidered lace."

The Haigh patent discloses an embroidered emblem comprised of an embroidered design

stitched onto a woven fabric backing material with an embroidered border, and a thermoplastic adhesive bonded to the other side of the backing material.

The Cox patent discloses a method of preparing articles of "actzed" embroidery whereby a design is embroidered directly onto a backing of thermoplastic material, the design and backing are ironed onto a transfer strip, and then the transfer strip is removed taking with it all parts of the backing not in contact with the embroidery. Embroidery is "actzed" when heat is used to remove the portions of a backing not in contact with embroidery stitches, so that the embroidered design is left hanging together like lace. The portions of the thermoplastic backing that remain in contact with the embroidery become absorbed or melted into the embroidery as a result of the ironing and serve to improve the bonding of the embroidery stitches and to give the embroidery more body. This improved bonding eliminates the need for underlay and interlock stitches, which would otherwise provide such additional bonding.

The Sernaker patent, issued to appellant in this case, discloses an embroidered transfer wherein a pattern is embroidered onto one side of a diaphanous material with the Schiffli machine, and a layer of adhesive is applied to the other side of this material. When this transfer is ironed onto a base fabric, the diaphanous material melts into the fabric and disappears from view; the transfer thus assumes the appearance of a pattern that is directly embroidered onto the base fabric.

### C. The Rejection

The board affirmed the examiner's rejection of claims 1, 4-6, and 9-11<sup>1</sup> under 35 U.S.C. § 103 as obvious in view of British taken with Miles, Vellins, and Butterick. The board also affirmed the rejection of claims 2, 3, and 8 for the same reasons and further in view of Cox or Haigh and Sernaker. The board took the position that appellant's invention in essence consisted of two known elements or procedures: (1) the transfer printing of multi-colored designs from a paper strip onto various types of substrates, including

<sup>1</sup> In Part II, 4 of the examiner's final rejection dated December 3, 1979, the examiner rejected appellant's claims 1-6, and 8-11. In the portion of this letter articulating the reasons for the rejection (Pt. II, 12), however, the examiner inadvertently omitted claim 11 from his discussion of the group of claims to which it belonged. The omission was a typographical error. The board corrected this error when it discussed the examiner's rejection of claims 1, 4-6, and 9-11.



ed onto a woven fabric backing material an embroidered border, and a thermosetting adhesive bonded to the other side of the backing material.

The Cox patent discloses a method of preparing articles of "aetzed" embroidery where the design is embroidered directly onto a piece of thermoplastic material, the design markings are ironed onto a transfer strip, when the transfer strip is removed taking with it all parts of the backing not in contact with the embroidery. Embroidery is "aetzed" when heat is used to remove the portions of a backing not in contact with embroidery stitching so that the embroidered design is left standing together like lace. The portions of thermoplastic backing that remain in contact with the embroidery become absorbed or dissolved into the embroidery as a result of the heat and serve to improve the bonding of the embroidery stitches and to give the embroidery more body. This improved bonding obviates the need for underlay and interlock stitches, which would otherwise provide such mechanical bonding.

The Sernaker patent, issued to appellant in 1956, discloses an embroidered transfer in which a pattern is embroidered onto one side of a diaphanous material with the Schiffrin machine, and a layer of adhesive is applied to the other side of this material. When this transfer is ironed onto a base fabric, the adhesive material melts into the fabric and sears from view; the transfer thus assumes the appearance of a pattern that is directly embroidered onto the base fabric.

### C. The Rejection

The board affirmed the examiner's rejection of claims 1, 4-6, and 9-11 under 35 U.S.C. § 103 as obvious in view of British with Miles, Vellins, and Butterick. The board also affirmed the rejection of claims 2, 3, and 8 for the same reasons and further in view of Cox or Haigh and Sernaker. The board took the position that appellant's invention in essence consisted of two known elements or procedures: (1) the transfer printing of multi-colored designs from a paper strip onto various types of substrates, including

fabrics, and (2) the making of embroidered transfers or emblems by stitching a pattern of different colored threads onto a substrate.

After noting that appellant had admitted that both of these elements were known in the prior art, the board characterized the manner in which appellant combined them to make a novel article in the following way: "A substrate is stitched with a single colored or white thread and then dyed in the form of a design by transfer printing." Transcript at 75. In the subsequent analysis of the cited references, the board treated various aspects of the appellant's claims as either taught by the references concerning transfer printing or those concerning emblem-making. The board thus reduced the appeal to the question "whether it would have been obvious for one skilled in this art, having these references available, to use the dye transfer process for coloring embroidered emblems." Transcript at 75. The board answered affirmatively, stating:

After reviewing the references, we come to the conclusion that the dye transfer process has been taught to be usable for almost any type of substrate, from relatively smooth fabrics to materials, such as carpets, which are rough in texture and even to aluminum substrates. The formation of embroidered fabrics is known and, as is taught by Butterick, white-on-white embroidery is commonly made. We believe that one skilled in this art would readily understand that the dye transfer process, as described in these references, and which is acknowledged to be old by appellant, may be used to transfer dye in the form of a pattern to any substrate, whether smooth or rough.

While we find the embroidered emblems extremely attractive, we believe that the process would have been obvious in view of the cited art and that only the expected additive results are obtained. Also, we must not lose sight of the fact that the claims are generic in nature and are not limited to the specific exhibits presented in this case. We must compare the claims with the methods and articles described in the references. When we do so, we come to the conclusion that the claimed process and resulting article would have been obvious to one skilled in this art.

(Transcript at 75-76.)

## II.

### Opinion

#### A. Whether the board correctly deduced obviousness from the prior art.

[2] We may assume, for purposes of this decision, that all the prior art references in this case are sufficiently related to one another and to a related and common art, that the hypothetical person skilled in the art must be presumed to be familiar with all of them. That being so, the next questions are (a) whether a combination of the teachings of all or any of the references would have suggested (expressly or by implication) the possibility of achieving further improvement by combining such teachings along the line of the invention in suit, and (b) whether the claimed invention achieved more than a combination which any or all of the prior art references suggested, expressly or by reasonable implication. These manifestly related tests are indicated as appropriate by the following decisions of the former Court of Customs and Patent Appeals reviewing, as we do here, decisions of the board denying patentability under § 103 on obviousness grounds.

Cases reversing the board and holding the invention patentable —

In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976).

In re Imperato, 486 F.2d 585, 179 USPQ 730 (CCPA 1973).

In re Adams, 356 F.2d 998, 148 USPQ 742 (CCPA 1966).

[3] Cases affirming the board and holding the invention unpatentable for obviousness —

In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In re Conrad, 439 F.2d 201, 169 USPQ 170 (CCPA 1971).

In re Sheckler, 438 F.2d 999, 168 USPQ 716 (CCPA 1971).

And there are many others. All these cases are binding precedents in this tribunal, as much as our own will be. *South Corp. v. United States*, 690 F.2d 1368, 215 USPQ 657 (Fed. Cir. 1982). None can be treated as discredited merely because expressions in them can be taken out of their context and construed as in conflict with expressions in other cases. Some minds will prefer the results of the first trio, others of the second. The tests stated above, (a) and (b), were the tests applied in all six cases.

The board majority misdescribed the invention by confusing the embroidery with the substrate and in supposing the inventor just applied a print to a rough substrate instead of a smooth one. It compared the invention with the prior art on the basis of the elements employed being print and substrate. Actually, by both claim 1 and claim 10, there are three component elements. The embroidery is introduced between the print and the substrate. No print is applied to the substrate. It is all

Part II, 4 of the examiner's final rejection dated December 3, 1979, the examiner rejected appellant's claims 1-6, and 8-11. In the portion of the decision articulating the reasons for the rejection of claim 11, however, the examiner inadvertently omitted claim 11 from his discussion of the group of claims to which it belonged. The omission was a clerical error. The board corrected this error and discussed the examiner's rejection of claims 1-6, 8-11.

applied to the embroidery. The pattern, being "sculptured," intercepts the colors in the print according to the designer's intentions. The print and the pattern (embroidery) are made to "register" (claim 1 and 10 both use this word), i.e., conform. They "mate."

Certainly the board pointed to no prior art that separately suggested expressly or by implication a three-element combination made up in this way. British in general teaches transfer prints on the substrate, as do Miles and Vellins. The remainder do not teach at all about transfer printing. When one skilled in the art at the time of the invention is considering all the prior art in combination, we wholly fail to perceive what more he would have found. The most that would have appeared to have been suggested was the use of transfer prints on rough substrates by which, no doubt, a variety of designs might have been achieved. Mating or registering are suggested nowhere in the prior art. Therefore, it does not show how to approach the results this inventor achieved. No prior art suggests expressly or by implication keeping the print off the substrate and providing a "sculptured" embroidery in a pattern to mate and register with the print.

Although British teaches transfer printing on lace, this patent does not envision the use of a pattern inserted between the transfer print and the lace substrate that would "mate" with the transfer print. Of course the lace substrate itself has an inherent pattern, but British makes no mention of it and does not even hint at mating the transfer print with this pattern. Without some express or implied suggestion, we cannot assume that one of ordinary skill in the art would have found it obvious to mate the transfer print with this pattern. More to the point, the inherent pattern in lace cannot be inserted between the lace substrate and the transfer print because the pattern is part and parcel of the substrate. Even though lace can be "re-embroidered," as Butterick teaches, the embroidery on re-embroidered lace does not initiate a pattern, but merely outlines the pattern of the lace itself; the single colored embroidery described in the first steps of appellant's claimed method, on the other hand, exhibits a pattern of its own designed to mate with the transfer print, and keeps the print off the substrate.

The conclusion is the same under test (b) as it is under test (a). Under test (b), the person who considered merely combining the teachings of prior art references would not expect from the references or any implication to be drawn therefrom that the great advance made by appellant's invention could be at-

tained. The board never showed how the teachings of the prior art could be combined to make the invention.

In re Sheckler, supra, may be taken as an example of a case where a combination of the teachings of prior art references suggested the inventor's result. The invention was for a building block for wall construction comprising a sandwich whose exterior portion were slabs of solid concrete and the interior, bonded to the slabs, was rigid light cellular heat insulating organic foam material. One prior art reference disclosed a reinforced concrete beam with an inner core of foamed polymeric material. Another disclosed a building block consisting of two layers of load-bearing glass separated by an interior layer of heat-insulating foamed glass material.

[4] It could not have placed any great strain on the intellect of the court to sustain the board's conclusion of obviousness. The court said, and we agree, it was not necessary that the prior art suggest expressly or in so many words, the "changes or possible improvements" the inventor made. It was only necessary that he apply "*knowledge clearly present in the prior art.*" Sheckler, 438 F.2d at 1001, 168 USPQ at 717. (Emphasis supplied.)

If this last test is not met, the invention claimed would not have been obvious from the references.

[5] In re Imperato, supra, may be taken as an example of a case when combination of the teachings of prior art references did not suggest the inventor's result. The court therefore reversed the board's holding of obviousness. The invention related to an improvement in the process of "beneficiating" low grade ore to prepare it for the blast furnace. Beneficiation requires grinding the ore to a finely divided state in order to facilitate the removal of impurities. Then, however, it must be recombined into lumps for the furnace. The prior art used various carbonates for bonding to which the inventor added free sulphur. Other prior art taught use of free sulphur only for bonding. The board thought it obvious to combine the two. The court, however, noted that combining both carbonates and sulphur achieved an unexpected result. Both prior processes resulted in lump ore having high strength at low temperatures, but not at high temperatures, whereas the combination obtained a lump ore having high strength in both situations, an unexpected and unobvious result. The lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings. It does not appear from

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*In re Imperato, supra*, may be taken as an example of a case when combination of the things of prior art references did not suggest the inventor's result. The court therefore reversed the board's holding of obviousness. Invention related to an improvement in the process of “beneficiating” low grade ore to prepare it for the blast furnace. Beneficiation requires grinding the ore to a finely divided state in order to facilitate the removal of impurities. Then, however, it must be agglomerated into lumps for the furnace. The prior art used various carbonates for bonding which the inventor added free sulphur. Prior art taught use of free sulphur for bonding. The board thought it obvious to combine the two. The court, however, held that combining both carbonates and sulphur achieved an unexpected result. Both processes resulted in lump ore having strength at low temperatures, but not at high temperatures, whereas the combination produced a lump ore having high strength in both situations, an unexpected and unobvious result. The lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings. It does not appear from

the opinion that the inventor actually did anything not disclosed somewhere in the prior art references, and in that regard the case was less favorable for unobviousness than the case at bar, where none of the prior art references disclosed an embroidery inserted between the print and the substrate, “registered” or mated the print with the embroidery, not the substrate, and transferred the print to the insert, not to the substrate.

For the foregoing reasons, it is clear that the principal rejection of claims 1, 4–6, and 9–11 cannot be sustained. The four references relied upon by the board for this rejection (*British, Miles, Vellins, and Butterick*), either separately or in combination, do not suggest that transfer printing techniques should be combined with embroidery techniques in the specific manner claimed in appellant's application. In view of all the art of record, we also hold that the secondary rejection of claims 2, 3, and 8 must be reversed. While *Cox, Haigh, and Sernaker* disclose various aspects about the making of embroidered emblems, none of them disclose or suggest transfer printing; they do not envision using transfer printing to create the effect of embroidery with different colored threads. Rather, they suggest using standard embroidery techniques, such as hand looming or embroidery with the Schiffli machine alone, to create the embroidered pattern. In the absence of any suggestion to use teachings concerning transfer printing in the making of embroidered emblems, we conclude that appellant's claimed invention would not have been obvious to one of ordinary skill in the art from the above seven references at the time of the invention.

#### B. Whether the board correctly disregarded the secondary considerations.

[6,7] Finally, we hold that the “secondary considerations” that the Supreme Court stated might be of possible utility in an obviousness determination, *Graham v. John Deere Co.*, 383 U.S. 1, 17–18, 148 USPQ 459, 466–467 (1966), also require a finding of nonobviousness if the matter be otherwise doubtful. In an appeal of a rejection of a patent application, secondary considerations, such as commercial success, typically do not play a large part in the analysis of obviousness because the inventor usually waits until his patent issues before he swings production into full gear. Thus, a detailed analysis of secondary considerations is more common in cases like *John Deere*, which involved infringement. If, however, a patent applicant properly presents evidence relating to these secondary considerations, the board must al-

ways consider such evidence in connection with the determination of obviousness. *In re Fielder and Underwood*, 471 F.2d 640, 644, 176 USPQ 300, 303 (CCPA 1973).

[8] Appellant presented a considerable amount of such evidence. Despite the fact that a patent has not yet issued, appellant has been able to license his invention. Appellant's licensees have sold millions of the emblems, and the *Gilardone* affidavit attests that appellant's invention has met with great commercial success, has helped revitalize a depressed embroidery industry, and has introduced a new kind of emblem into the marketplace. The *DeVries* affidavit also attests to the uniqueness of appellant's invention. In addition, the record clearly shows that appellant's multicolored, embroidered emblems are considerably cheaper to produce than the prior art embroidered emblems. It is true the prior art references relied on to establish obviousness had not been available to the inventor very long. Things apparently were moving fast in that industry. This might justify the thought that the want filled by the invention had not been felt very long, but it does not justify wholly ignoring these secondary considerations which here speak with unusual eloquence.

[9,10] In the face of all this evidence, the board was silent. Although the two affidavits in the record before us were submitted after the examiner's decision became final, they were submitted before the board reached its decision. While appellant presented the *DeVries* affidavit to the examiner after his final action, 37 C.F.R. §1.116(b) (1982) would allow the examiner to admit this evidence upon a showing of good cause. Under 37 C.F.R. §1.195 (1982), the board had the power to admit the later *Gilardone* affidavit upon a similar showing. The record before us, however, is unclear whether the examiner did, in fact, admit the *DeVries* affidavit, and whether the board admitted the *Gilardone* affidavit; neither the examiner nor the board mentioned these affidavits. In response to our specific question in oral argument, however, the solicitor admitted that the “commercial success” affidavits were before the board. In addition, the solicitor cited in his brief the telling *Gilardone* affidavit and assured us that the board did consider evidence of commercial success. He stated:

The argument (Br-15), that the Board of Appeals failed to consider the evidence of commercial success, is untenable. The Board specifically stated that they found the embroidered emblems “extremely attractive” (R-76). This appears to be a recognition that the emblems would be well-received commercially. Appellant's af-

fidavit (R-64) [the Gilardone affidavit] shows only that the emblems have had good sales. There is no comparison with the sales of other embroidered emblems.

[11] As we stated above, the Gilardone affidavit shows much more than "good sales." In addition, we reject the notion that the board's bare compliment of the emblems as "extremely attractive" implies assignment of weight to appellant's commercial success evidence. To accept this notion would shrink the meaning of the phrase "secondary considerations" beyond belief. The board in fact said nothing about the commercial success of appellant's invention, and nothing about any of the other considerations the Supreme Court deemed relevant. Although the solicitor assures us that the board did consider the evidence before us relating to secondary considerations, we do not agree with his analysis of this evidence, nor do we find any support for this analysis in the board's opinion.

The solicitor in effect has stipulated that the board considered the evidence, which necessarily implies that it allowed the filing of it on a showing of good cause, as to which there is no other evidence in the record. In view of this stipulation, it appears it would be inappropriate to remand the case for the board to consider the same evidence a second time. We can only conclude that for some unexplained and, to us, unfathomable reason, the board found it insufficient to overcome the, to it, plain indications of obviousness.

For the reasons stated in this opinion, the decision of the board is reversed.

*Reversed.*

Davis, Circuit Judge, concurring in part and concurring in the result.

I join in Parts I and II B of Judge Nichols' opinion. As for Part II A, my judicial microscope suggests to me that, if the prior art is considered alone, the case is much closer than his opinion indicates. Differences there are, of course, between appellant's invention and the prior art, but it is not plain to me, from the bare references alone (especially those disclosing or suggesting transfer printing on lace and other rough-textured or somewhat "sculptured" material), that the invention was not obvious from the prior art. I need not, however, decide that unclear question on the references alone. For me the crucial insight is the "secondary consideration" of commercial success which (as Part II B of the main opinion spells out) appellant has fully proved, the Solicitor has not sought to rebut and has admitted was before the Board, and the Board failed properly to consider. Under

Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 466-467 (1966), that type of success is a relevant factor, and in this close case I think it decisive in showing nonobviousness.

### Court of Appeals, Federal Circuit

Richdel, Inc.  
v. Sunspool Corporation

No. 83-611

Decided Feb. 17, 1983

### PATENTS

#### 1. Court of Appeals for the Federal Circuit — Pleading and practice (§26.57)

CAFC Rule 7(a) provides that, except for individual appearing pro se, each party and amicus curiae must appear through attorney who is authorized to practice before CAFC; nothing in CAFC rules suggests that exception is to be made due to expense corporation will incur through attorney.

Richdel, Inc., appellant, versus Sunspool Corporation, appellee.

On request of appellee's president to represent appellee. Request denied.

Before Friedman, Rich, and Davis, Circuit Judges.

Per curiam.

### Order

This is a request by Harry T. Whitehouse, the president of appellee, Sunspool Corporation, to represent his corporation, which is the appellee in this patent case. Mr. Whitehouse apparently is not a lawyer. He seeks to represent his corporation because "[t]he continuing accrual of professional fees \* \* \* has imposed a substantial financial hardship upon the Appellee."

[1] Rule 7(a) of the Rules of this court provides that "[e]xcept for an individual appearing pro se, each party and amicus curiae must appear through an attorney who is